



Consommation et
Affaires commerciales Canada

Bureau des brevets

Ottawa, Canada
K1A 0C9

Consumer and
Corporate Affairs Canada

Patent Office

| | | |
|------|------|------------|
| (21) | (A1) | 2,100,631 |
| (22) | | 1993/07/15 |
| (43) | | 1994/02/25 |

5,062,8/67

(51) INTL.CL.⁵ G06F-012/14 .

(19) (CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Method for Remotely Overriding of Program or File Access
Passwords from a Telephone Instrument

(72) Gallick, Robert L. - U.S.A. ;
Emery, Mark - U.S.A. ;
Hewell, James F. - U.S.A. ;
Detering, Greig R. - U.S.A. ;

(71) AG Communication Systems Corporation - U.S.A. ;

(30) (US) 933,539 1992/08/24

(57) 21 Claims

Notice: This application is as filed and may therefore contain an
incomplete specification.

Canada

CCA 3254 (10-92) 41 7530-21-936-3254

2100631

A METHOD FOR REMOTELY OVERRIDING OF PROGRAM OR FILE
ACCESS PASSWORDS FROM A TELEPHONE

ABSTRACT

A method of overriding a file or program access password from a remote location via a telephone interface. The password is used by a computer program to either lock the program or one of its data files. Also, the computer program contains a master override code to which the received override code must match. A regular DTMF telephone and telephone line are used. The first step requires that a connection be established between the computer and the telephone. This can be accomplished by either having the computer user call the remote telephone, or the remote telephone call the computer user. After the connection is established, the computer user is asked to place the computer in the proper mode. Generally, this requires that the computer user place the computer program in the mode where it is expecting the computer user to enter the password. Next, DTMF tones representing the override code are transmitted from the telephone to the computer. After receiving the tones, the computer converts the received tones to the override code and compares it to the master override code. Finally, the password is modified if the override code matches the master override code.

WHAT IS CLAIMED IS:

1. A method for remotely modifying a password by a telephone instrument means, said password being used by a computer program, said computer program being executed by a computer means, said computer program containing a master override code, said method comprising the steps of:
 - establishing a connection between said computer means and said telephone instrument means over a telephone line means;
 - placing said computer program in a password override mode;
 - transmitting an override code from said telephone instrument means over said telephone line means to said computer means;
 - comparing said override code to said master override code; and
 - modifying said password if said override code matches said master override code.
2. A method as claimed in claim 1 wherein said step of comparing being performed by said computer means.
3. A method as claimed in claim 1 wherein said step of modifying being performed by said computer means.
4. A method as claimed in claim 1 wherein said step of transmitting being performed by said telephone instrument means.
5. A method as claimed in claim 1 wherein said override code comprising:
 - a series of preamble tones, said series of preamble tones signaling to said computer means that said modifying of said password is being attempted;
 - a series of data tones; and

a series of ending tones, said series of ending tones signaling to said computer means that said modifying of said password is complete.

6. A method as claimed in claim 5 wherein said series of data tones are a dual tone multi-frequency type.

7. A method for remotely modifying a password by a telephone instrument means, said password being used by a computer program, said computer program being executed by a computer means, said computer program containing a master override code, said computer means being connected to said telephone instrument means by a telephone line means, said method comprising the steps of:

transmitting tones from said telephone instrument means over said telephone line means to said computer means, said tones representing an override code;
 receiving said tones;
 converting said received tones to said override code;
 comparing said override code to said master override code; and
 modifying said password if said override code matches said master override code.

8. A method as claimed in claim 7 said step of converting being performed by said computer means.

9. A method as claimed in claim 7 wherein said step of comparing being performed by said computer means.

10. A method as claimed in claim 7 wherein said step of modifying being performed by said computer means.

11. A method as claimed in claim 7 wherein said step of transmitting being performed by said telephone instrument means.

2100631

12. A method as claimed in claim 7 wherein said tones are a dual tone multi-frequency type.

13. A method for remotely modifying a password used by a computer means, said method comprising the steps of:
establishing a connection to said computer means;
transmitting an override code to said computer
5 means; and
modifying said password if said override code is
verified.

14. A method as claimed in claim 13 wherein said step of modifying being performed by said computer means.

15. A method as claimed in claim 13 wherein said override code comprising:
a series of preamble tones, said series of preamble tones signaling to said computer means that said modify-
5 ing of said password is being attempted;
a series of data tones; and
a series of ending tones, said series of ending tones signaling to said computer means that said modifying of said password is complete.

16. A method as claimed in claim 15 wherein said series of preamble tones, said series of data tones, and said series of ending tones all being generated by a telephone instrument means.

17. A method as claimed in claim 15 wherein said series of data tones are a dual tone multi-frequency type.

18. A method as claimed in claim 13 wherein said override code is transmitted to said computer means as a series of tones.

2100631

19. A method as claimed in claim 18 wherein said series of tones are a dual tone multi-frequency type.

20. A method as claimed in claim 16 wherein said step of establishing a connection being between said computer means and said telephone instrument means.

21. Each and every novel feature or novel combination of features herein disclosed.

A METHOD FOR REMOTELY OVERRIDING OF PROGRAM OR FILE
ACCESS PASSWORDS FROM A TELEPHONE INSTRUMENT

FIELD OF THE INVENTION

The present invention relates to password protected
5 computer programs and files. Specifically, the present
invention is a means to remotely override a file or pro-
gram access password via a telephone line with very
little user intervention.

BACKGROUND OF THE INVENTION

10 Many of today's computer programs provide a means to
protect sensitive data by password protection. Some pro-
grams even scramble the data based on the password to in-
crease protection. Generally, the user of the program
must invoke some special command to first assign a pass-
15 word for the file or program. Once the user has entered
the password the program or file cannot be entered again
without first providing the proper password.

When computer systems are based on a single CPU with
multiple terminals attached, the system administrator can
20 modify user information such as passwords. However, with
personal computers there is generally no systems adminis-
trator. Thus, if a user forgets the password for a file
or program, the information may be lost or, at the very
least, difficult to retrieve.

25 To retrieve this information, the user may have to
send the file to the software developer and ask them to
retrieve it. This may take weeks to complete. Another
popular method requires the user call the developer who
then gives verbal information to the user about how to
30 override the present password. The primary problem here
is the numerous systems and configuration each with its
own subtly and the high likelihood of human error in
executing the verbal instructions.

Therefore, it is the objective of the present inven-
35 tion to provide a means to override a file or program

access password from a remote location via a telephone line with very little user intervention.

SUMMARY OF THE INVENTION

In order to accomplish the object of the present invention there is provided a method for remotely modifying a password from a telephone. The password is used by a computer program to either lock the program or one of its data files. Also, the computer program contains a master override code to which the received override code must match. A regular DTMF telephone and telephone line are used. The first step requires that a connection be established between the computer and the telephone. This can be accomplished by either having the computer user call the remote telephone, or the remote telephone call the computer user. After the connection is established, the computer user is asked to place the computer in the proper mode. Generally, this requires that the computer user place the computer program in the mode where it is expecting the computer user to enter the password. Next, DTMF tones representing the override code are transmitted from the telephone to the computer. After receiving the tones, the computer converts the received tones to the override code and compares it to the master override code. Finally, the password is modified if the override code matches the master override code.

DESCRIPTION OF THE DRAWINGS

A better understanding of the invention may be had from the consideration of the following detailed description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a system diagram of the card's relationship to the host PC, incoming telephone line and extension telephones.

FIG. 2 is a block diagram showing the hardware aspects of the accessory card.

FIG. 3A is a flow chart of the sequence of events that occur when causing a password override from a remote location.

FIG. 3B is a continuation of the flow chart of the sequence of events that occur when causing a password override from a remote location.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is part of a software package communicating in some way to a telephone line interface device capable of decoding DTMF tones. The general environment, as shown in figure 1, is a personal computer with monitor, keyboard, and mouse 101, a DTMF detection telephone line interface accessory card 102, and standard telephone line. The invention's primary use is to reset file/program access passwords that have been misplaced or forgotten with the default password originally contained in the file/program, or, with a password that is communicated via the phone line in the same manner as the override code. It will be useful in situations where the file/program user is located a considerable distance from the support people who are capable of resetting the password and unlocking the file/program.

In order to cause a password override from a remote location using the present invention, a telephone connection between the interface card and the remote location must first be established. This will usually be requested by the file/program user since they will be the one who has forgotten or misplaced their password. After verifying the identity of the person requesting the password override, the process would begin.

First, it must be verified that an accessory card capable of receiving DTMF tones and passing the interpreted information to the software is present. The software in the PC device must then be put in a specific state by the user. This state would be achieved by selecting a particular mode such as a window indicating entry of the security password. When the user at the PC end has put the user interface into this state, they

communicate this by voice via the same or other co-located telephone link. At this point, the support end will send the DTMF codes, which may or may not be preceded or followed by other call progress tones for added security. These DTMF codes may be entered manually by simply using a touch tone phone. However, if other call progress tones are used, an additional tone generation device may be required. After the PC accessory card has received the complete override code and the software has verified it, the software will cause the present access password to be replaced with either a pre-programmed default password or a password that is communicated via the DTMF override code. Now the PC user may enter the new password to gain access to the locked file.

With that overview, a more detailed description follows. Referring to figure 3A, when the first DTMF value is detected, the program verifies that any required call progress tones, such as dial tones, were received prior to receiving the first digit. If so, or if none were required, then it is determined whether the DTMF tone matches the override code embedded in the program 302. If it does not match, processing is returned to the main loop. However, if it does match, a check is made to determine whether the DTMF code received is the first code in the override code 303. If not the first code, it is determined whether the override code is being received by checking if all previous DTMF values received matched the corresponding DTMF character value 304. If any of the previous values do not match, then control is returned to the main loop. Next, if all previous characters matched or if this is the first DTMF tone received, then a check is made to see if the entire password override code string has been received 305. If not, processing returns to the main loop, otherwise a flag is set indicating to the main program that an override sequence has been received 306. Sub-program variables are reset and processing is returned to the main loop 307. The main program can then reset the file program access password to a new password. An indication is shown on the

user interface that the password has been changed to a default value or a new value as determined by additional DTMF values sent in the override sequence received over the phone line.

- 5 The present invention differs from existing remote password override schemes in that it requires no interface to a modem or modem like device at either end of the telephone line connection.

- 10 Although the preferred embodiment of the invention has been illustrated, and that form described, it is readily apparent to those skilled in the art that various modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

2100631

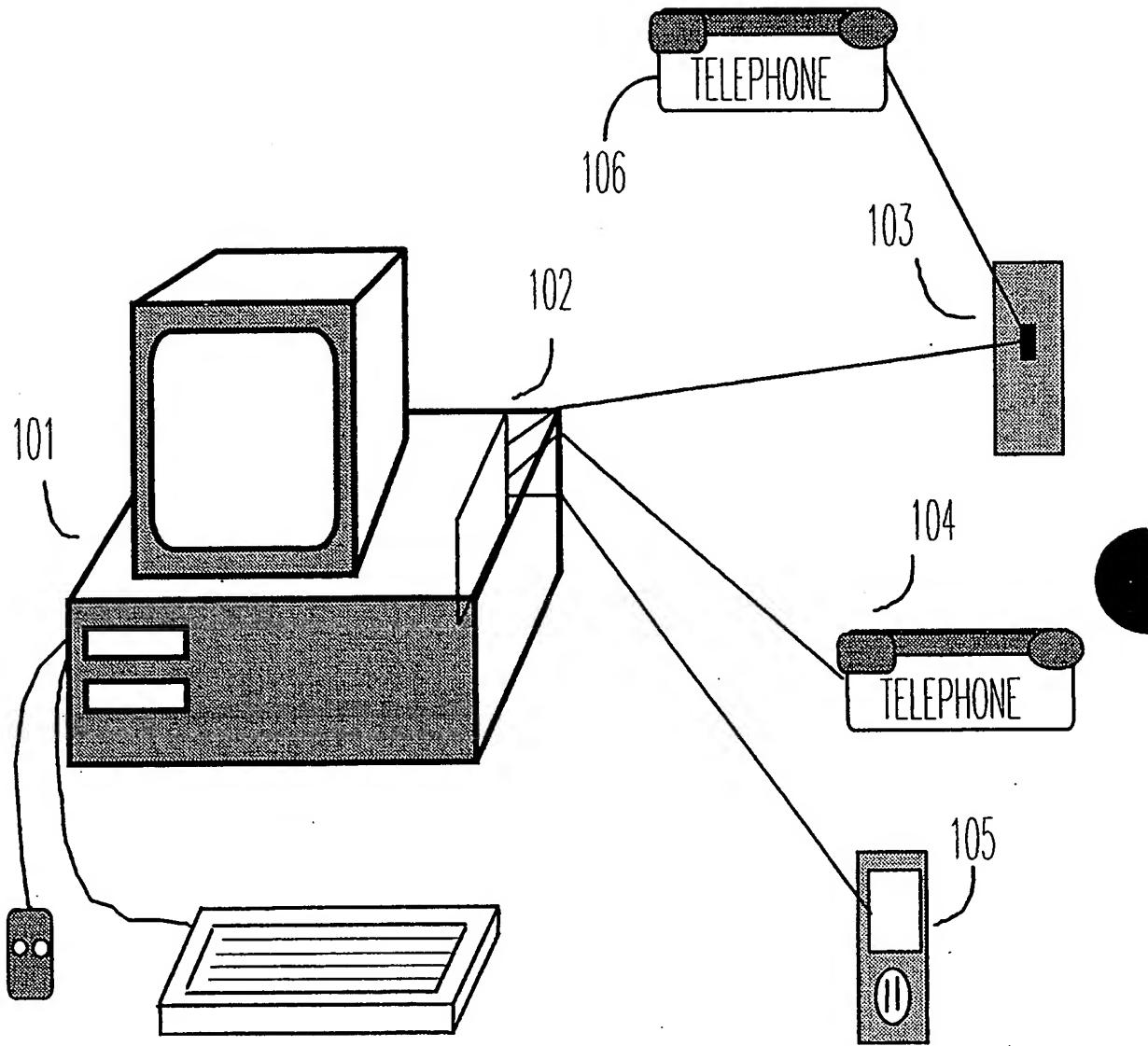


Figure 1

2100631

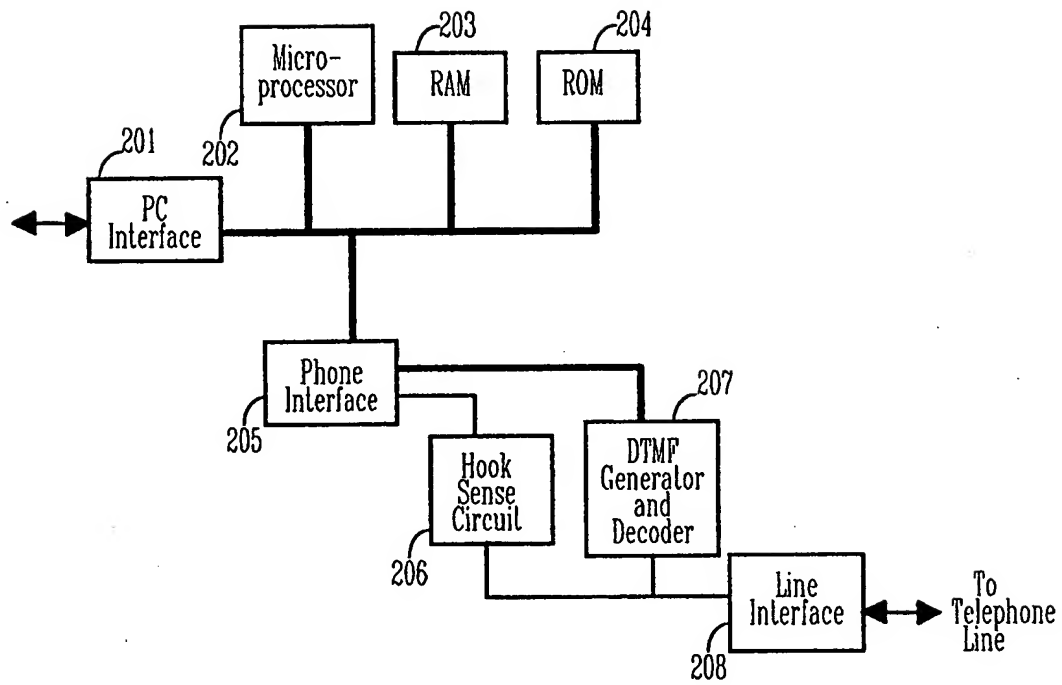


Figure 2

2100631

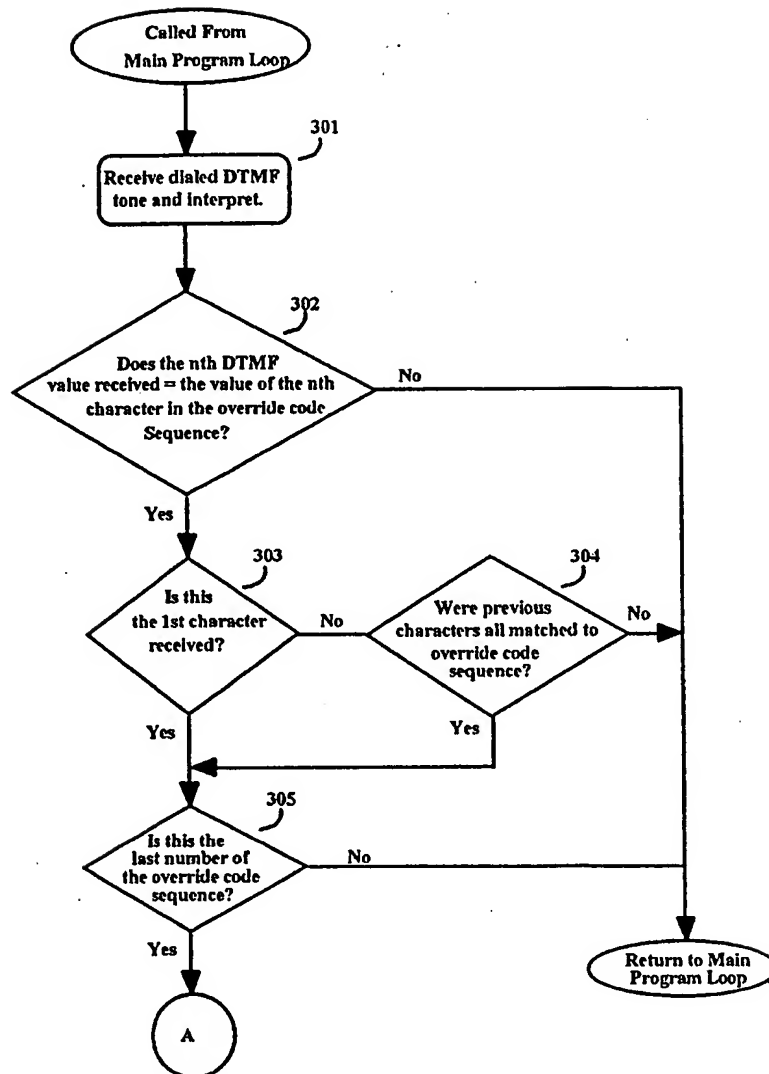


Figure 3A

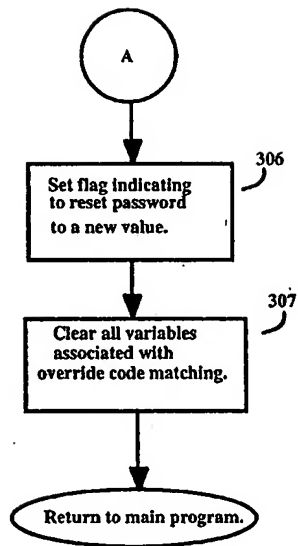


Figure 3B

